

# STN Columbus

\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
 NEWS 2 "Ask CAS" for self-help around the clock  
 NEWS 3 SEP 09 CA/CAPLUS records now contain indexing from 1907 to the  
 present  
 NEWS 4 DEC 08 INPADOC: Legal Status data reloaded  
 NEWS 5 SEP 29 DISSABS now available on STN  
 NEWS 6 OCT 10 PCTFULL: Two new display fields added  
 NEWS 7 OCT 21 BIOSIS file reloaded and enhanced  
 NEWS 8 OCT 28 BIOSIS file segment of TOXCENTER reloaded and enhanced  
 NEWS 9 NOV 24 MSDS-CCOHS file reloaded  
 NEWS 10 DEC 08 CABA reloaded with left truncation  
 NEWS 11 DEC 08 IMS file names changed  
 NEWS 12 DEC 09 Experimental property data collected by CAS now available  
 in REGISTRY  
 NEWS 13 DEC 09 STN Entry Date available for display in REGISTRY and CA/CAPLUS  
 NEWS 14 DEC 17 DGENE: Two new display fields added  
 NEWS 15 DEC 18 BIOTECHNO no longer updated  
 NEWS 16 DEC 19 CROPU no longer updated; subscriber discount no longer  
 available  
 NEWS 17 DEC 22 Additional INPI reactions and pre-1907 documents added to CAS  
 databases  
 NEWS 18 DEC 22 IFIPAT/IFIUDB/IFICDB reloaded with new data and search fields  
 NEWS 19 DEC 22 ABI-INFORM now available on STN  
  
 NEWS EXPRESS DECEMBER 28 CURRENT WINDOWS VERSION IS V7.00, CURRENT  
 MACINTOSH VERSION IS V6.0b(ENG) AND V6.0Jb(JP),  
 AND CURRENT DISCOVER FILE IS DATED 23 SEPTEMBER 2003  
 NEWS HOURS STN Operating Hours Plus Help Desk Availability  
 NEWS INTER General Internet Information  
 NEWS LOGIN Welcome Banner and News Items  
 NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
 NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that  
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\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 07:11:06 ON 21 JAN 2004

=> fil reg; s porphyrinato	SINCE FILE	TOTAL
COST IN U.S. DOLLARS	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'REGISTRY' ENTERED AT 07:11:48 ON 21 JAN 2004  
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Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 19 JAN 2004 HIGHEST RN 639450-02-5  
DICTIONARY FILE UPDATES: 19 JAN 2004 HIGHEST RN 639450-02-5

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2003

Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

L1 850 PORPHYRINATO

=> s l1 and pyrid?

1731268 PYRID?

L2 66 L1 AND PYRID?

=> d scan\

'SCAN\' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'

The following are valid formats:

Substance information can be displayed by requesting individual fields or predefined formats. The predefined substance formats are: (RN = CAS Registry Number)

REG - RN  
SAM - Index Name, MF, and structure - no RN  
FIDE - All substance data, except sequence data  
IDE - FIDE, but only 50 names  
SQIDE - IDE, plus sequence data  
SQIDE3 - Same as SQIDE, but 3-letter amino acid codes are used  
SQD - Protein sequence data, includes RN  
SQD3 - Same as SQD, but 3-letter amino acid codes are used  
SQN - Protein sequence name information, includes RN

CALC - Table of calculated properties  
EPROP - Table of experimental properties  
PROP - EPROP and CALC

Any CA File format may be combined with any substance format to obtain CA references citing the substance. The substance formats must be cited first. The CA File predefined formats are:

ABS -- Abstract  
APPS -- Application and Priority Information  
BIB -- CA Accession Number, plus Bibliographic Data  
CAN -- CA Accession Number  
CBIB -- CA Accession Number, plus Bibliographic Data (compressed)  
IND -- Index Data  
IPC -- International Patent Classification  
PATS -- PI, SO  
STD -- BIB, IPC, and NCL

## STN Columbus

IABS --ABS, indented, with text labels  
IBIB -- BIB, indented, with text labels  
ISTD -- STD format, indented

OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations

The ALL format gives FIDE BIB ABS IND RE, plus sequence data when it is available.

The MAX format is the same as ALL.

The IALL format is the same as ALL with BIB ABS and IND indented, with text labels.

For additional information, please consult the following help messages:

HELP DFIELDS -- To see a complete list of individual display fields.  
HELP FORMATS -- To see detailed descriptions of the predefined formats.  
ENTER DISPLAY FORMAT (IDE):

```
* * * * * RECONNECTED TO STN INTERNATIONAL * * * * *  
SESSION RESUMED IN FILE 'REGISTRY' AT 07:12:36 ON 21 JAN 2004  
FILE 'REGISTRY' ENTERED AT 07:12:36 ON 21 JAN 2004  
COPYRIGHT (C) 2004 American Chemical Society (ACS)  
ENTER DISPLAY FORMAT (IDE):d scan l2  
'D' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'  
'SCAN' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'  
'L2' IS NOT A VALID FORMAT FOR FILE 'REGISTRY'
```

The following are valid formats:

Substance information can be displayed by requesting individual fields or predefined formats. The predefined substance formats are: (RN = CAS Registry Number)

REG - RN  
SAM - Index Name, MF, and structure - no RN  
FIDE - All substance data, except sequence data  
IDE - FIDE, but only 50 names  
SQIDE - IDE, plus sequence data  
SQIDE3 - Same as SQIDE, but 3-letter amino acid codes are used  
SQD - Protein sequence data, includes RN  
SQD3 - Same as SQD, but 3-letter amino acid codes are used  
SQN - Protein sequence name information, includes RN  
  
CALC - Table of calculated properties  
EPROP - Table of experimental properties  
PROP - EPROP and CALC

Any CA File format may be combined with any substance format to obtain CA references citing the substance. The substance formats must be cited first. The CA File predefined formats are:

ABS -- Abstract  
APPS -- Application and Priority Information  
BIB -- CA Accession Number, plus Bibliographic Data  
CAN -- CA Accession Number  
CBIB -- CA Accession Number, plus Bibliographic Data (compressed)  
IND -- Index Data  
IPC -- International Patent Classification

# STN Columbus

PATS -- PI, SO  
STD -- BIB, IPC, and NCL

IABS --ABS, indented, with text labels  
IBIB -- BIB, indented, with text labels  
ISTD -- STD format, indented

OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations

The ALL format gives FIDE BIB ABS IND RE, plus sequence data when it is available.

The MAX format is the same as ALL.

The IALL format is the same as ALL with BIB ABS and IND indented, with text labels.

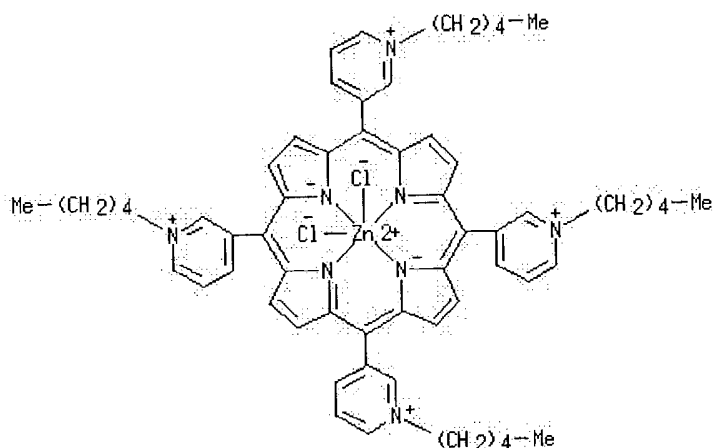
For additional information, please consult the following help messages:

HELP DFIELDS -- To see a complete list of individual display fields.  
HELP FORMATS -- To see detailed descriptions of the predefined formats.  
ENTER DISPLAY FORMAT (IDE):end

=> d scan

L2 66 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
IN Zinc(2+), dichloro[[3,3',3'',3'''-(21H,23H-porphine-5,10,15,20-tetrayl-κN21,κN22,κN23,κN24)tetrakis[1-pentylpyridiniumato]](2-)]-, (OC-6-12)- (9CI)  
MF C60 H68 Cl2 N8 Zn . 2 Cl  
CI CCS

PAGE 1-A



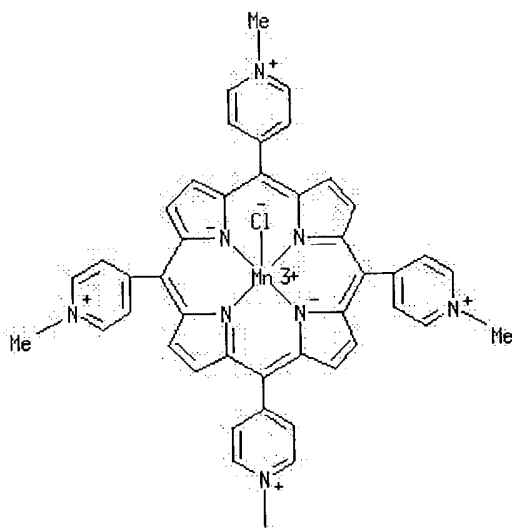
PAGE 2-A

# 2 Cl<sup>-</sup>

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1).

L2 66 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
 IN Manganese(4+), chloro[[4,4',4'',4'''-(21H,23H-porphine-5,10,15,20-tetrayl-KN21,KN22,KN23,KN24)tetrakis[1-methylpyridiniumato]](2-)]-, tetrachloride, (SP-5-12)- (9CI)  
 MF C44 H36 Cl Mn N8 . 4 Cl  
 CI CCS

PAGE 1-A



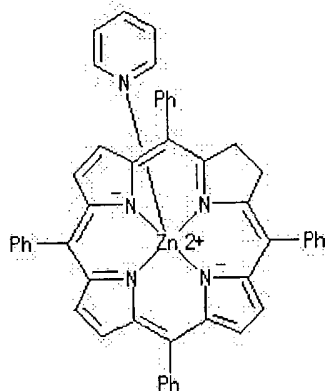
PAGE 2-A

# 4 Cl<sup>-</sup>

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):.

L2 66 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
 IN Zinc, [7,8-dihydro-5,10,15,20-tetraphenyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24](pyridine)-, (SP-5-32)-, compd. with benzene (1:1) (9CI)  
 MF C49 H35 N5 Zn . C6 H6

CM 1



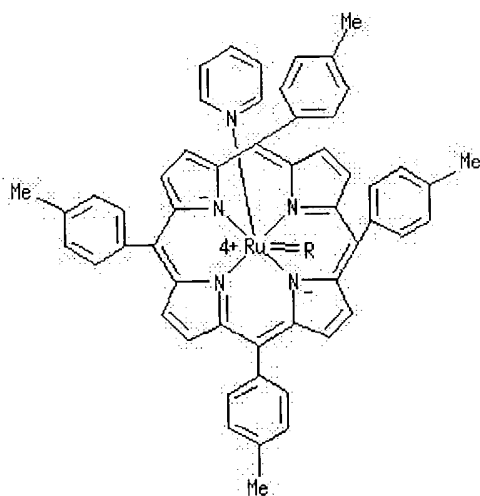
CM 2

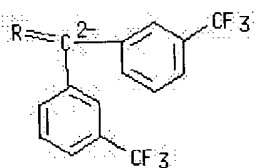


HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1).

L2 66 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
 IN Ruthenium, [bis[3-(trifluoromethyl)phenyl]methylene] (pyridine) [5,10,15,20-tetrakis(4-methylphenyl)-21H,23H-porphinato(2-)-κN21,κN22,κN23,κN24]-, (OC-6-14)- (9CI)  
 MF C68 H49 F6 N5 Ru  
 CI CCS

PAGE 1-A

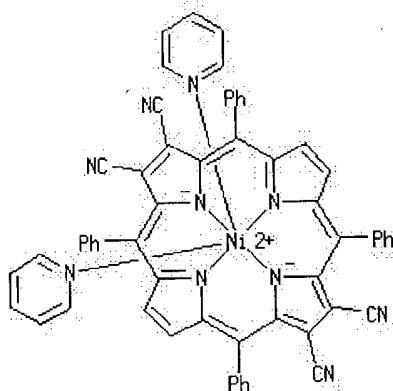




HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1).

L2 66 ANSWERS REGISTRY COPYRIGHT 2004 ACS on STN  
 IN Nickel, bis(pyridine) [5,10,15,20-tetraphenyl-21H,23H-porphine-  
 2,3,12,13-tetracarbonitrilato(2-)-κN21,κN22,κN23,κ  
 N24]-, (OC-6-12)-, compd. with methanol (1:2) (9CI)  
 MF C58 H34 N10 Ni . 2 C H4 O

CM 1



CM 2

H3C-OH

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1)end

=> fil ca; d his

COST IN U.S. DOLLARS

FULL ESTIMATED COST

SINCE FILE

ENTRY

10.54

TOTAL

SESSION

10.75

FILE 'CA' ENTERED AT 07:14:22 ON 21 JAN 2004

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FILE COVERS 1907 - 15 Jan 2004 VOL 140 ISS 4  
FILE LAST UPDATED: 15 Jan 2004 (20040115/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

(FILE 'HOME' ENTERED AT 07:11:06 ON 21 JAN 2004)

FILE 'REGISTRY' ENTERED AT 07:11:48 ON 21 JAN 2004

L1 850 S PORPHYRINATO  
L2 66 S L1 AND PYRID?

FILE 'CA' ENTERED AT 07:14:22 ON 21 JAN 2004

=> s l2 and (electrophotog? or photorecept? or photoconduct?)

652 L2  
60022 ELECTROPHOTOG?  
31163 PHOTORECEPT?  
63606 PHOTOCONDUCT?  
L3 16 L2 AND (ELECTROPHOTOG? OR PHOTORECEPT? OR PHOTOCONDUCT?)

=> d fbib ab hitstr 1-16; fil stnguide

L3 ANSWER 1 OF 16 CA COPYRIGHT 2004 ACS on STN

### Full Text

AN 138:47960 CA  
TI Light induced charge transfer and switching of the photocurrent direction in contacts of electrolytes with molecular semiconductor electrodes  
AU Schlettwein, D.; Karmann, E.; Oekermann, T.; Yanagi, H.  
CS Physikalische Chemie 1, Universitaet Oldenburg, Oldenburg, 26111, Germany  
SO GDCh-Monographien (2001), 23(Elektronenuebertragung in Chemie und Biochemie), 63-70  
CODEN: GDCHAI  
PB Gesellschaft Deutscher Chemiker  
DT Journal  
LA German  
AB In photoelectrochem. expts. at evapd. thin films of mol. semiconductors it is shown that charge carriers in excited states above the 1st excited state can be of sufficient lifetime to be transferred to an adjacent redox electrolyte despite the strong intermol. coupling and hence increased no. of recombination pathways. The assignment of the optical absorption bands in the solid state to transitions between distinct MOs is shown to be of practical relevance. If a material of a suitable position of energy levels is chosen the direction of the photocurrent can be switched by illuminating with light of 2 different wavelengths. Such characterization of electronic excited states in mol. solids is of fundamental as well as tech. significance due to the related phenomena of **photoconduction** (photocopiers, laser printers), light emission (org. LEDs) and the photovoltaic effect (solar energy conversion).

IT 26603-01-0

RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP

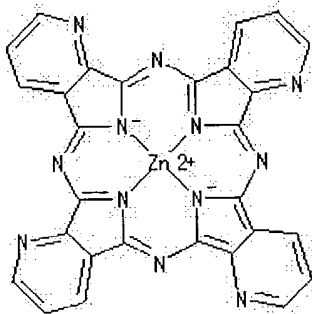


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(Physical process); PROC (Process)

(photoinduced charge transfer and switching of photocurrent direction  
in contacts of electrolytes with mol. semiconductor electrodes)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3'''-l:2''',3''''-  
q]porphyrinato(2-)-KN29,KN30,KN31,KN32]-,  
(SP-4-1)-(9CI) (CA INDEX NAME)RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 2 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 137:343857 CA

TI **Electrophotographic photoconductor** comprising porphyrin compound

IN Tanaka, Masato

PA Canon Kabushiki Kaisha, Japan

SO Eur. Pat. Appl., 35 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1255167	A2	20021106	EP 2002-8009	20020410
	EP 1255167	A3	20031210		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
				JP 2001-114345 A	20010412
	JP 2002371202	A2	20021226	JP 2002-99999	20020402
				JP 2001-114345 A	20010412
	US 2002192581	A1	20021219	US 2002-119003	20020410
				JP 2001-114345 A	20010412
	CN 1380292	A	20021120	CN 2002-105870	20020412
				JP 2001-114345 A	20010412

OS MARPAT 137:343857

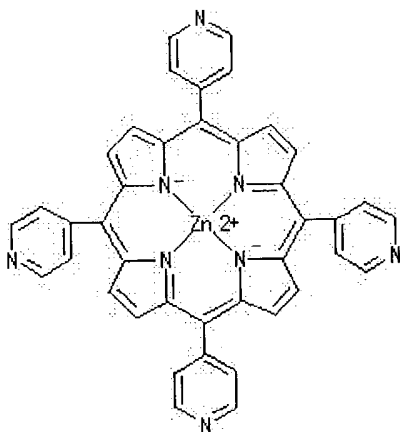
AB An **electrophotog. photoconductor** having a sensitivity to a short semiconductor laser light in a wavelength range of 380 - 500 nm is provided by incorporating a specific porphyrin compd. in a photosensitive layer. The porphyrin compd. is characterized by having a heterocyclic substituent, preferably 4 heterocyclic substituents each of a pyridyl group. The porphyrin compd. suitable for use as a charge generating material includes a 5,10,15,20-tetrapyridyl-21H,23H-porphyrinato-zinc compd. having a novel crystal form characterized by certain peaks in a CuK $\alpha$ -characteristic X-ray diffraction pattern.

IT 31183-11-6P, Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-1)-

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RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(**electrophotog. photoconductor** comprising zinc porphyrin compd. with certain crystal structure)

RN 31183-11-6 CA  
CN Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L3 ANSWER 3 OF 16 CA COPYRIGHT 2004 ACS on STN

### Full Text

AN 135:67675 CA  
TI Wavelength-dependent switching of the photocurrent direction at the surface of molecular semiconductor electrodes based on orbital-confined excitation and transfer of charge carriers from higher excited states  
AU Schlettwein, D.; Karmann, E.; Oekermann, T.; Yanagi, H.  
CS Department of Chemistry, Institute of Applied and Physical Chemistry, University of Bremen, Bremen, D-28334, Germany  
SO Electrochimica Acta (2000), 45(28), 4697-4704  
CODEN: ELCAAV; ISSN: 0013-4686  
PB Elsevier Science Ltd.  
DT Journal  
LA English  
AB Photoelectrochem. expts. are performed at evapd. thin films of unsubstituted phthalocyanines (Pc) and derivs. with electroneg. substituent groups in the ligand. Light absorption in the B-band leads to occupation of a higher excited singlet state S2 relative to the first excited singlet state S1 that is populated by Q-band absorption. Charge carriers in S2 can have sufficient lifetime to be transferred to adsorbed reactants at the electrode surface despite the competing relaxation into S1 and to the ground state S0. The assignment of the well-defined B- and Q-bands in the solid state to transitions between distinct MOs is thereby proven to be of practical relevance. If a material of a suitable position of energy levels is chosen, the direction of charge transfer can be switched by illumination with light of the two different wavelengths. According to the sep. pathways of reaction starting from the S2 and S1 excited states different quantum efficiencies are obtained following absorption in either the B- or Q-band. Surface traps in the different reactions of charge transfer to the electrolyte are detected by charging and discharging photocurrent spikes. Implications of the present findings for the fundamental discussion of elec. and electrochem. properties involving illumination of mol. modified electrodes which are in part also

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of tech. significance due to the related phenomena of **photoconduction** (photocopiers, laser printers), light emission (org. light emitting diodes) and charge transfer (solar energy conversion) are discussed.

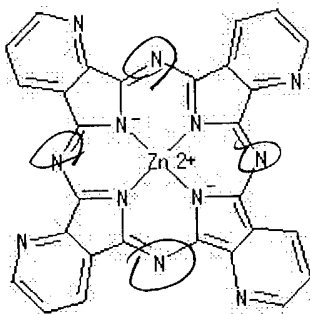
IT 26603-01-0

RL: PRP (Properties)

(wavelength-dependent switching of photocurrent direction at surface of  
of mol. semiconductor)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3'''-l:2''',3'''-q]porphyrinato(2-)-KN29,KN30,KN31,KN32]-,  
(SP-4-1)- (9CI) (CA INDEX NAME)



RE.CNT 68 THERE ARE 68 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 131:305495 CA

TI Intermolecular interactions and electrical properties in thin films of  
tetrapyrrodotetraazaporphyrinatozinc(II)

AU Schlettwein, D.; Meyer, J. P.; Jaeger, N. I.

CS Institut für Angewandte und Physikalische Chemie, FB 2, Universität  
Bremen, Bremen, D-28334, Germany

SO Journal of Porphyrins and Phthalocyanines (1999), 3(6/7), 611-619  
CODEN: JPPHFZ; ISSN: 1088-4246

PB John Wiley Sons Ltd.

DT Journal

LA English

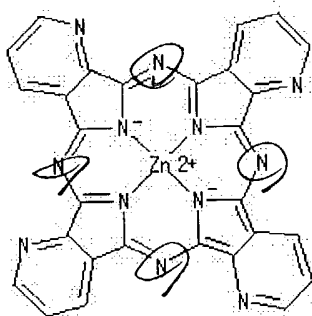
AB Tetrapyrrodotetraazaporphyrinatozinc (TPyTAPZn) can be looked at as a substituted phthalocyanine. Thin films of TPyTAPZn were prep'd. on quartz glass by phys. vapor deposition under high-vacuum conditions. During the deposition, island growth was obs'd. by a characteristic change in the elec. conduction, indicating an increasing no. of conduction pathways along the film. Deposition conditions could be optimized to yield an ordered rather than amorphous growth as detected by a characteristic absorption band in the visible range, strongly red-shifted from the absorption of the monomeric mol. in soln. A neg. Seebeck coeff. confirmed n-type conduction for TPyTAPZn. In temp.-dependent measurements of the elec. cond. and thermopower across the samples, an activation energy of 0.31 eV was established for the cond. and of 0.04 eV for charge carrier generation. From this difference, a thermally activated charge carrier transport mechanism (hopping) rather than delocalized conduction (band model) is dominant in TPyTAPZn. **Photoconduction** turned out to be rather small in these samples, although light was absorbed quite efficiently. The time dependence of **photoconduction** indicated a significant trap d. Interaction with NH3 or NEt3 in the gas phase increased the cond.; O or H2O led to a decrease. The time dependence of these interactions

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indicated that  $\text{NH}_3$  and  $\text{H}_2\text{O}$  were only reacting with the surface region, whereas  $\text{NH}_3$  and  $\text{O}_2$  were also diffusing into the bulk of the films.

IT 26603-01-0  
 RL: PEP (Physical, engineering or chemical process); PRP (Properties);  
 PROC (Process)  
 (intermol. interactions and elec. properties in thin films of  
 tetrapyrrodotetraazaporphyrinatozinc(II))

RN 26603-01-0 CA  
 CN Zinc, [29H,31H-tetrapyrrodo[2,3-b:2',3'-g:2'',3'''-l:2''',3'''-q]porphyrinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)- (9CI) (CA INDEX NAME)



RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 16 CA COPYRIGHT 2004 ACS on STN

## Full Text

AN 127:170518 CA  
 TI Metal porphyrin derivative organic magnetic material and  
**electrophotographic** magnetic toner and magnetic ink using it  
 IN Nakajima, Shinichiro  
 PA Ricoh Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

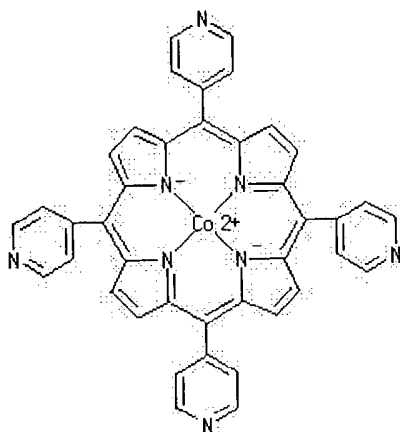
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 09180918	A2	19970711	JP 1995-350524	19951222
			JP 1995-350524	19951222

AB The org. magnetic material is a metal porphyrin deriv. I (M = transition metal; X = N, S, O; n = 1) or its polymeric complex (M = Co; X = N; n > 1). The magnetic toner and ink contains I. The compd. shows ferromagnetic property at ambient temp. and various colors to give color magnetic toners and inks.

IT 14244-55-4P

RL: IMF (Industrial manufacture); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
 (electrophotog. magnetic toner and ink using (polymeric)  
 metal porphyrin deriv. org. ferromagnetic material)

RN 14244-55-4 CA  
 CN Cobalt, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L3 ANSWER 6 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 127:127817 CA

TI Photoinduced electron transfer from porphyrin to C60 in a C60|porphyrin double-layer photoelectrochemical cell

AU Takahashi, Kohshin; Etoh, Katuyoshi; Tsuda, Yoshihiro; Yamaguchi, Takahiro; Komura, Teruhisa; Ito, Shoji; Murata, Kazuhiko

CS Department of Chemistry and Chemical Engineering, Faculty of Engineering, Kanazawa University, Kodatsuno, Kanazawa, Japan

SO Journal of Electroanalytical Chemistry (1997), 426(1-2), 85-90  
CODEN: JECHES; ISSN: 0368-1874

PB Elsevier

DT Journal

LA English

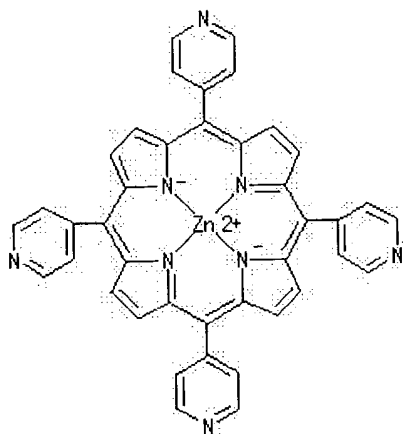
AB Photoelectrochem. properties of double-layer electrodes consisting of a very thin film of C60 and porphyrin solids were studied in a quinhydrone aq. soln. A larger anodic photocurrent was obtained in the photoelectrochem. cell using an ITO (indium tin oxide)|C60|Zntpp (5,10,15,20-tetraphenylporphyrinatozinc) electrode compared with that for ITO|C60 or ITO|Zntpp electrodes. However, when the ITO|Zntpp|C60 electrode, deposited in reverse order, is employed, a cathodic photocurrent was obtained. Neither of the double-layer electrodes exhibits rectification. Probably the primary process of the photocurrent generation is a photoinduced electron transfer from Zntpp to C60 enhancing the photocurrent, and the Zntpp and C60 solids do not act as semiconductors but as photosensitizers.

IT 31183-11-6

RL: DEV (Device component use); PRP (Properties); USES (Uses)  
(photocurrent in photoelectrochem. cell with ITO electrode with fullerene film and porphyrin film in aq. quinhydrone)

RN 31183-11-6 CA

CN Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-  
KN21,KN22,KN23,KN24]-, (SP-4-1)-(9CI) (CA INDEX  
NAME)



L3 ANSWER 7 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 125:129606 CA

TI Photoelectrochemical effects and (photo)conductivity of "N-type" phthalocyanines

AU Karmann, E.; Meyer, J.-P.; Schlettwein, D.; Jaeger, N. I.; Anderson, M.; Schmidt, A.; Armstrong, N. R.

CS Inst. Angewandte Phys. Chem., Univ. Bremen, Bremen, 28334, Germany

SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1996), 283 (Proceedings of the 7th International Conference on Unconventional Photoactive Systems, 1995), 283-291

CODEN: MCLCE9; ISSN: 1058-725X

PB Gordon Breach

DT Journal

LA English

AB In vacuo thin films of the phthalocyanine derivs. TPyTAPZn and F16PcZn show n-type behavior in thermopower and cond. measurements. After exposure to air the properties are changed characteristically. Photoelectrochem. expts. show that while TPyTAPZn still behaves like an n-type semiconductor, F16PcZn exhibits the properties of a **photoconductor**. Time-dependent measurements give further insight into the differences between the two materials in their interaction with gaseous dopants. The results are discussed in terms of different positions of the HOMO- and LUMO-orbitals of TPyTAPZn and F16PcZn taken from UPS-measurements.

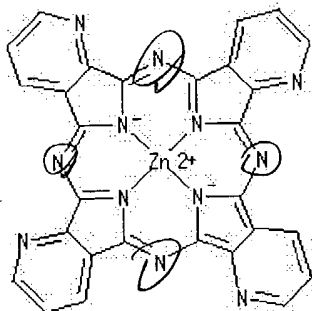
IT 26603-01-0

RL: PRP (Properties); TEM (Technical or engineered material use); USES (Uses)

(photoelectrochem. effects and (photo)cond. of "N-type" phthalocyanines)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L3 ANSWER 8 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 125:43639 CA

TI Photoelectrochemical oxidation of 2-mercaptoethanol at the surface of octacyanophthalocyanine thin film electrodes

AU Karmann, E.; Schlettwein, D.; Jaeger, N. I.

CS Universitaet Bremen, Institut fuer Angewandte und Physikalische Chemie, Fachbereich 2, Postfach 330440, Bremen, D-28334, Germany

SO Journal of Electroanalytical Chemistry (1996), 405(1-2), 149-158  
CODEN: JECHES; ISSN: 0368-1874

PB Elsevier

DT Journal

LA English

AB Thin films of octacyanophthalocyanine metal complexes on ITO substrates were studied in photoelectrochem. expts. in comparison with tetrapyridotetraazaporphyrinatozinc, tetrapyrazinotetraazaporphyrinatozinc and unsubstituted phthalocyaninatozinc in contact with aq. redox electrolytes contg. 2-mercaptoethanol or hydroquinone. At electrodes of the zinc(II) octacyanophthalocyanine complex and at electrodes of tetrapyridotetraazaporphyrinatozinc and tetrapyrazinotetraazaporphyrinatozinc the current under illumination exceeds that in the dark by a factor of up to five, whereas no significant photocurrent is obsd. at electrodes of unsubstituted phthalocyaninatozinc. The relative concns. of electrons in the LUMO (CB) and defect-electrons in the HOMO (VB) are influenced by a changing electron d. within the inner ring  $\pi$ -system, leading to the obsd. differences in the semiconducting properties. Electrodes of Zn octacyanophthalocyanine complexes were studied in further detail. In spite of the presence of thiyl-radicals the electrodes performed at a high stability. The thiolate anion is the electroactive species. The dependence of the photocurrent on the reactant concn. could be attributed to an adsorption step. A model including charging and discharging processes of these surface states is presented for the anal. of photocurrent transients as obtained by a chopped light beam.

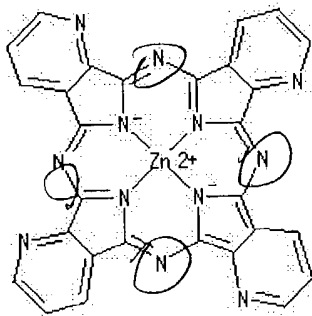
IT 26603-01-0

RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)

(photoelectrochem. oxidn. of mercaptoethanol at surface of octacyanophthalocyanine thin film electrodes)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrazinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L3 ANSWER 9 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 122:202995 CA

TI Factors which control the "N-type" or "P-type" photoelectrical behavior of molecular semiconductor thin films

AU Schlettwein, D.; Armstrong, N. R.; Lee, P. A.; Nebesny, K. W.

CS Department of Chemistry, Univ. of Arizona, Tucson, AZ, 85721, USA

SO Molecular Crystals and Liquid Crystals Science and Technology, Section A: Molecular Crystals and Liquid Crystals (1994), 252-253, 453-63

CODEN: MCLCE9; ISSN: 1058-725X

PB Gordon Breach

DT Journal

LA English

AB Thin cryst. films of phthalocyaninatozinc(II) (PcZn), and its derivs. tetrapyridotetraazaporphyrinatozinc(II) (TPyTAPZn) and naphthalocyaninatozinc(II) (NcZn); and of perylenetetracarboxylic dianhydride (PTCDA) and its deriv. dimethylperylene-tetracarboxylic diimide (MePTCDI), were prepd. by vapor deposition under UHV conditions. The elec. cond. ( $\sigma_d$ ) and photocond. ( $\sigma_p$ ) of these films were measured on interdigitated microelectrode arrays (IMA) of PtSix on Si. The films were studied as prepd. and during exposure to rising partial pressures of O and NH<sub>3</sub>. Changes of  $\sigma_d$  and  $\sigma_p$  with O<sub>2</sub> or NH<sub>3</sub> exposure, as well as changes in their activation energies EA, showed striking differences among the studied compds. Ground-state levels are derived from in-situ UPS expts., excited state levels from luminescence measurements. The influence of the position of these energy levels on the elec. properties is discussed within existing models of mol. semiconductors, and the impact of these studies on the use of these materials in photoelectrochem. and solid state photovoltaic cells is discussed.

IT 26603-01-0

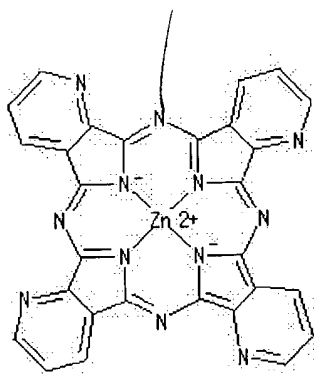
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)  
(elec. cond. and photoelec. properties of CVD mol. semiconductor films)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3''-l:2''',3'''-q]porphyrinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)- (9CI) (CA INDEX NAME)



## STN Columbus



L3 ANSWER 10 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 121:313748 CA

TI **Photoconductive** porphyrin thin-films, fabrication, and multilayers thereof

IN Nonaka, Toshio; Takahagi, Takayuki; Ishitani, Hikari

PA Shingijutsu Kaihatsu Jigyodan, Japan; Tore Risaachi Sentaa Kk

SO Jpn. Kokai Tokkyo Koho, 16 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 05275771	A2	19931022	JP 1992-68398	19920326
				JP 1992-68398	19920326

AB Title multilayer thin-films (square mean av. surface roughness  $\leq 100$  Å) are prepd. by evapg. mol. porphyrin derivs., depositing mol. porphyrin in vacuum at  $\leq 1 \times 10^{-7}$  torr, and repeating the film formation with porphyrin complexes with different metals: wherein the porphyrin derivs. include 5,10,15,20-tetraphenylporphyrin and 5,10,15,20-tetraphenylporphyrinates with Zn, Co, Pb, Ni, Mg, Cu, and Cd. The fabrication provides the **photoconductive** thin-film with an excellent surface property and useful for manuf. of solar cells and **photoconductive** devices.

IT 14244-55-4 31183-11-6 59729-19-0

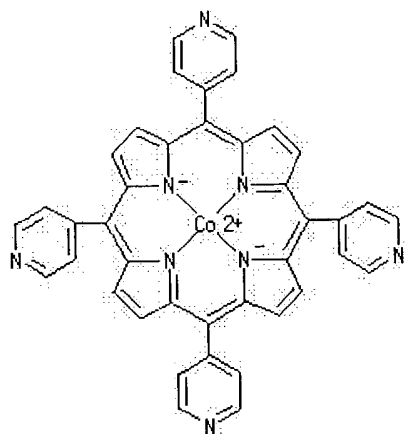
RL: PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)

(mol.-beam deposition of, for fabrication of multilayer **photoconductive** thin-films)

RN 14244-55-4 CA

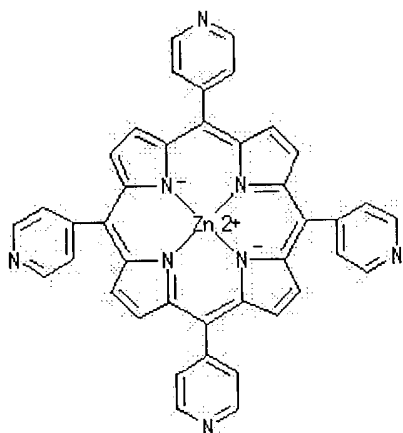
CN Cobalt, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-1)- (9CI) (CA INDEX NAME)

STN Columbus



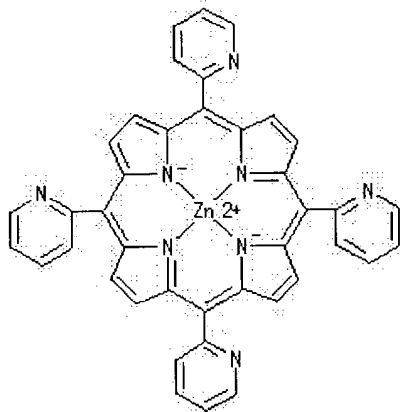
RN 31183-11-6 CA

CN Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-  
κN21,κN22,κN23,κN24]-, (SP-4-1)- (9CI) (CA INDEX  
NAME)



RN 59729-19-0 CA

CN Zinc, [5,10,15,20-tetra-2-pyridinyl-21H,23H-porphinato(2-)-  
κN21,κN22,κN23,κN24]-, (SP-4-1)- (9CI) (CA INDEX  
NAME)



L3 ANSWER 11 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 119:190673 CA

TI Semiconducting behavior of substituted tetra-azaporphyrin thin films in photoelectrochemical cells

AU Yanagi, H.; Tsukatani, K.; Yamaguchi, H.; Ashida, M.; Schlettwein, D.; Woehrle, D.

CS Fac. Eng., Kobe Univ., Nada, 657, Japan

SO Journal of the Electrochemical Society (1993), 140(7), 1942-8

CODEN: JESOAN; ISSN: 0013-4651

DT Journal

LA English

AB Photoelectrochem. properties of zinc(II) and copper(II) complexes of (1) phthalocyanine, (2) tetrapyrrodo[2,3-b,2',3'-g;2'',3'''-l;2''',3''''-q]-5,10,15,20-tetraazaporphyrin, and (3) tetrapyrzino[b;g;l;q]-5,10,15,20-tetraazaporphyrin, were investigated in thin-film electrodes prepd. by vacuum deposition (VD), drop-casting (DC) and in situ synthesis (IS). The opposing behavior, photoredn. at electrodes of 1 and photo-oxidn. at electrodes of 2 and 3, are discussed in terms of a band-energy shift of tetraazaporphyrin macrocycles caused by substitution with heterocyclic pyrido and pyrazino groups. The photoelectrochem. efficiency of the electrodes is strongly affected by the film morphol. which is dependent on the prepn. methods, and increased in order of DC<VD<IS.

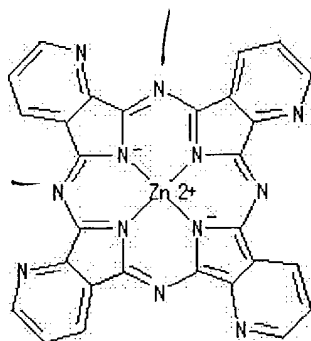
IT 26603-01-0

RL: PRP (Properties)

(photoelectrochem. behavior of, deposition method effect on)

RN 26603-01-0 CA

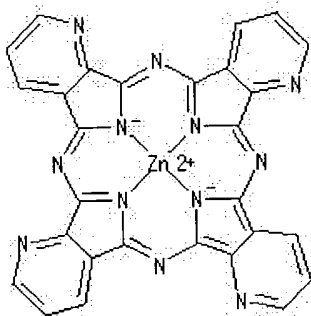
CN Zinc, [29H,31H-tetrapyrrodo[2,3-b:2',3'-g:2'',3'''-l:2''',3''''-q]porphyrinato(2-)-kN29,kN30,kN31,kN32]-, (SP-4-1)-(9CI) (CA INDEX NAME)



L3 ANSWER 12 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 116:70418 CA  
 TI Photoelectrochemical investigations of molecular semiconductors: characterization of the conduction type of various substituted porphyrins  
 AU Schlettwein, D.; Jaeger, N. I.; Woehrle, D.  
 CS Inst. Angew. Phys. Chem., Univ. Bremen, Bremen, W-2800/33, Germany  
 SO Berichte der Bunsen-Gesellschaft (1991), 95(11), 1526-30  
 CODEN: BBPCAX; ISSN: 0005-9021  
 DT Journal  
 LA English  
 AB The charge transfer from thin film electrodes (thickness  $\approx 130$  nm) of the zinc(II) complexes of phthalocyanine (I), 2,3,9,10,16,17,23,24-octacyanophthalocyanine (II), tetrapyrrodo[2,3-b; 2',3'-g; 2'',3'''-l; 2''',3''''-q]5,10,15,20-tetraazaporphyrin (III) and tetrapyrzino[b;g;l;q]-5,10,15,20-tetraazaporphyrin (IV) to oxygen or EDTA dissolved in an aq. electrolyte was investigated. Illumination with visible light results in photocurrents which are characteristic for each of the studied compds. The observations are discussed in terms of the band model suitable for mol. org. semiconductors. From the obsd. predominant direction of the photocurrent a trend in the band positions and the conduction type of the materials I, II, III and IV is established. The transformation of a p-type into a n-type porphyrin solid can be achieved by appropriate chem. substitution in the ligand system.  
 IT 26603-01-0, [Tetrapyrrodo[2,3-b:2',3'-g:2'',3'''-l:2''',3''''-q]-5,10,15,20-tetraazaporphyrinato(2-)]zinc  
 RL: PRP (Properties)  
 (photocurrent and redox potential and photoelectrochem. electrode of semiconductive, in aq. solns. contg. oxygen or EDTA)  
 RN 26603-01-0 CA  
 CN Zinc, [29H,31H-tetrapyrrodo[2,3-b:2',3'-g:2'',3'''-l:2''',3''''-q]porphyrinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)-(9CI) (CA INDEX NAME)



L3 ANSWER 13 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 114:71008 CA  
 TI Photoelectrochemical properties of thin films of cadmium, zinc, and magnesium porphyrins with pyridyl group  
 AU Takahashi, Kohshin; Katsurada, Hisashi; Komura, Teruhisa; Imanaga, Hiroto  
 CS Fac. Technol., Kanazawa Univ., Kanazawa, 920, Japan  
 SO Bulletin of the Chemical Society of Japan (1990), 63(11), 3315-16  
 CODEN: BCSJAB; ISSN: 0009-2673  
 DT Journal  
 LA English

# STN Columbus

AB Cadmium and zinc porphyrins with pyridyls or aminophenyl group gave smaller activation energy for the transfer of the carriers photoproduced in the solid thin film and larger cathodic photocurrent in quinhydrone soln. than tetraphenylporphyrinato-cadmium and -zinc. The properties may be ascribed to the mol. arrangement of the porphyrins in the film. The max. photocurrent, the activation energy of the transfer of photoproduced carrier, and the 1st ring oxidn. potential for Mg, Cd, and Zn porphyrins (tetraphenylporphyrin, 5-(4-pyridyl)-10,15,20-triphenylporphyrin) are given.

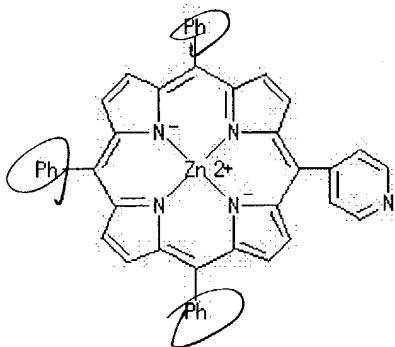
IT 117256-47-0

RL: PRP (Properties)

(photocurrent and activation energy of transfer of photoproduced carriers and ring oxidn. potential of)

RN 117256-47-0 CA

CN Zinc, [5,10,15-triphenyl-20-(4-pyridinyl)-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-2)- (9CI) (CA INDEX NAME)



79 C6  
52

L3 ANSWER 14 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 113:180078 CA

TI Electrochemical and photoelectrochemical characterizations of electrodes covered by zinc tetra-2,3-pyridinoporphyrazine layers

AU Yang, M. Z.; De Backer, M. G.; Sauvage, F. X.

CS Lab. Chim. Phys., CNRS, Lille, 59046, Fr.

SO New Journal of Chemistry (1990), 14(4), 273-7  
CODEN: NJCHE5; ISSN: 0398-9836

DT Journal

LA English

AB Tetra-2,3-pyridinoporphyrazins, (analogous to phthalocyanins) can be easily deposited on electrodes via electrochem. methods. The layers thus obtained are stable in aq. solns. Cyclic voltammetry, differential capacitance, as well as action spectra and photoluminescence measurements were performed. The interpretation of the results indicates that the layers behave like n-type semiconductors having a flatband potential of -0.38 V/SCE. It was obsd. that in the presence of methylviologen, new species were formed.

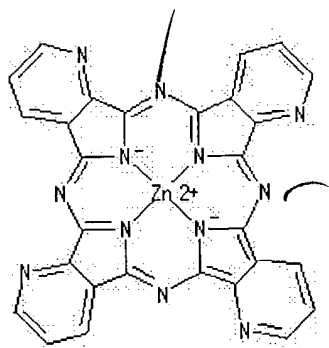
IT 26603-01-0

RL: PRP (Properties)

(electrochem. and photoelectrochem. characterization of electrodes covered with electrochem. prepd. layers of)

RN 26603-01-0 CA

CN Zinc, [29H,31H-tetrapyrido[2,3-b:2',3'-g:2'',3''-l:2''',3'''-qlporphyrinato(2-)-KN29,KN30,KN31,KN32]-, (SP-4-1)- (9CI) (CA INDEX NAME)



L3 ANSWER 15 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 111:15850 CA

TI Conductance control of porphyrin solids by molecular design and doping

AU Yamashita, Kazuo; Harima, Yutaka; Matsubayashi, Tatsuro

CS Fac. Integr. Arts Sci., Hiroshima Univ., Hiroshima, 730, Japan

SO Journal of Physical Chemistry (1989), 93(13), 5311-15

CODEN: JPCHAX; ISSN: 0022-3654

DT Journal

LA English

AB Photovoltaic effects obsd. with a thin sublimed film of 5, 10, 15, 20-tetra(4-pyridyl)porphyrin (T(4-Py)P), T(3-Py)P, or T(2-Py)P sandwiched between Al and In-Sn oxide (ITO) electrodes are explained in terms of the n-type semiconducting behavior of the pyridylporphyrin film and formation of a blocking contact (Schottky barrier) with ITO. The doping effects of electron donors and acceptors into the porphyrin solids upon the photocurrents are also consistent with the n-type conductance of the pyridylporphyrins. Similar n-type semiconducting behaviors are obsd. with other porphyrins having heterocyclic substituents such as 6-quinolyl and 6-quinoxalyl groups. A series of phenyl/4-pyridyl meso-substituted porphyrins were investigated. It was found that at least 3 pyridyl groups are necessary for the porphyrin film to exhibit the n-type conductance. However, this is not a sufficient condition, because introduction of a Zn(II) ion into the center of the porphyrin ring of T(4-Py)P leads to the conductance change from the n-type to the p-type as the 1st ring redn. potential varies from -0.93 V to -1.16 V vs SCE. The ease of redn. of the porphyrin mol. is also necessary for manifestation of the n-type conductance in addn. to the presence of the heterocyclic groups. The 1st redn. potential of the porphyrin mol. is adopted as an index relating with the conductance type of porphyrin solids.

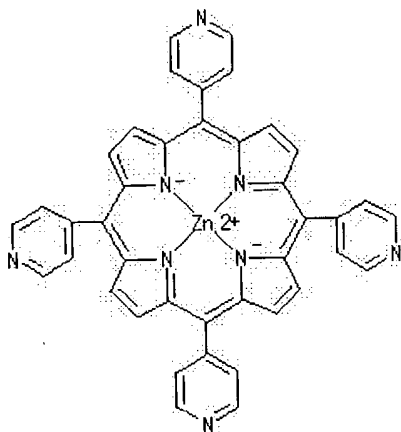
IT 31183-11-6

RL: PRP (Properties)

(redn. potential of, photovoltaic effect in relation to)

RN 31183-11-6 CA

CN Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-kN21,kN22,kN23,kN24]-, (SP-4-1)-(9CI) (CA INDEX NAME)



L3 ANSWER 16 OF 16 CA COPYRIGHT 2004 ACS on STN

Full Text

AN 110:162334 CA

TI Photoelectrochemical properties of thin films of zinc porphyrin derivatives with pyridyl group

AU Takahashi, Koshin; Komura, Teruhisa; Imanaga, Hiroto

CS Fac. Technol., Kanazawa Univ., Kanazawa, 920, Japan

SO Bulletin of the Chemical Society of Japan (1989), 62(2), 386-91

CODEN: BCSJA8; ISSN: 0009-2673

DT Journal

LA English

AB The cathodic photocurrents of the film electrodes of ZnPyP3P(3) and ZnPyP3P(4), (PyP3P(n), 5-(2-, 3-, and 4-pyridyl)-10,15,20-triphenylporphyrin, where (n) denotes the position of free bond of pyridyl groups), were almost 4 times larger than that of ZnTPP (TPP, 5,10,15,20-tetraphenylporphyrin) in 0.01 mol dm<sup>-3</sup> quinhydrone aq. soln. at pH 5. On the other hand, the very small anodic photocurrent was obsd. with the film electrodes of ZnTPyP(3) and ZnTPyP(4) (TPyP(n), 5,10,15,20-tetra(2-, 3-, and 4-pyridyl)porphyrin). The photoelectrochem. properties of ZnPyP3P(2) and ZnTPyP(2) were distinct from those of other structural isomers, but approx. similar to those of ZnTPP. The cond. of ZnPyP3P(n) films were about 3 orders of magnitude larger than those of ZnTPP and ZnTPyP(n) films. It was found from the absorption and resonance Raman spectra that the pyridyl group in porphyrin coordinated to Zn in another porphyrin in the solid films as well as in toluene and dichloromethane solns. The mol. arrangement of Zn porphyrin in the solid film probably influenced the photoelectrochem. properties and the cond.

IT 31183-11-6 59729-19-0 117256-47-0

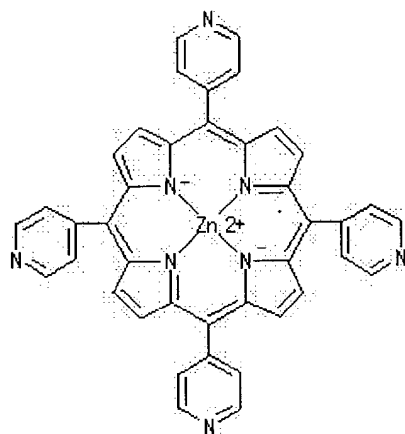
RL: PRP (Properties)

(photocond. and elec. cond. and visible spectra for)

RN 31183-11-6 CA

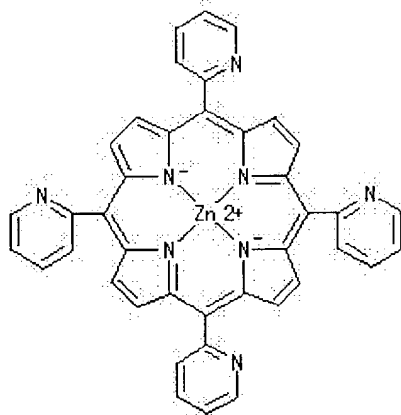
CN Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-  
KN21,KN22,KN23,KN24]-, (SP-4-1)-(9CI) (CA INDEX  
NAME)

STN Columbus



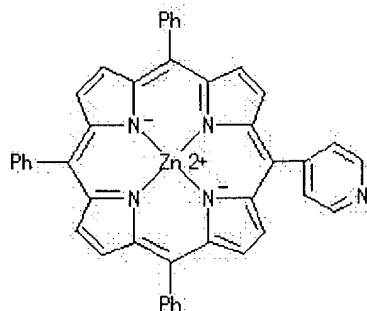
RN 59729-19-0 CA

CN Zinc, [5,10,15,20-tetra-2-pyridinyl-21H,23H-porphinato(2-)-  
κN21,κN22,κN23,κN24]-, (SP-4-1)- (9CI) (CA INDEX  
NAME)



RN 117256-47-0 CA

CN Zinc, [5,10,15-triphenyl-20-(4-pyridinyl)-21H,23H-porphinato(2-)-  
κN21,κN22,κN23,κN24]-, (SP-4-2)- (9CI) (CA INDEX  
NAME)





## STN Columbus

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 LAST RELOADED: Jan 16, 2004 (20040116/UP).

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FILE COVERS 1907 - 15 Jan 2004 VOL 140 ISS 4  
 FILE LAST UPDATED: 15 Jan 2004 (20040115/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

35957 PORPHYRIN?  
 329775 PYRID?  
 2664 PORPHYRIN? (P) PYRID?  
 60022 ELECTROPHOTOG?  
 L4 2 (PORPHYRIN? (P) PYRID?) AND ELECTROPHOTOG?

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FILE 'REGISTRY' ENTERED AT 07:11:48 ON 21 JAN 2004  
 L1 850 S PORPHYRINATO

# STN Columbus

L2 66 S L1 AND PYRID?

FILE 'CA' ENTERED AT 07:14:22 ON 21 JAN 2004

L3 16 S L2 AND (ELECTROPHOTOG? OR PHOTORECEPT? OR PHOTOCONDUCT?)

FILE 'STNGUIDE' ENTERED AT 07:15:08 ON 21 JAN 2004

FILE 'CA' ENTERED AT 07:20:04 ON 21 JAN 2004

L4 2 S (PORPHYRIN? (P) PYRID?) AND ELECTROPHOTOG?

=> s l4 not l3

L5 0 L4 NOT L3

=> d kwic 1-2 l4

L4 ANSWER 1 OF 2 CA COPYRIGHT 2004 ACS on STN

TI **Electrophotographic** photoconductor comprising porphyrin compound  
 AB An **electrophotog.** photoconductor having a sensitivity to a short semiconductor laser light in a wavelength range of 380 - 500 nm is provided by incorporating a specific **porphyrin** compd. in a photosensitive layer. The **porphyrin** compd. is characterized by having a heterocyclic substituent, preferably 4 heterocyclic substituents each of a **pyridyl** group. The **porphyrin** compd. suitable for use as a charge generating material includes a 5,10,15,20-tetrapyridyl-21H,23H-**porphyrinato**-zinc compd. having a novel crystal form characterized by certain peaks in a CuK $\alpha$ -characteristic X-ray diffraction pattern.

ST zinc tetrapyridyl porphyrin **electrophotog** photoconductor

IT **Electrophotographic** photoconductors (photoreceptors)  
 (electrophotog. photoconductor comprising zinc porphyrin compd. with certain crystal structure)

IT 31183-11-6P, Zinc, [5,10,15,20-tetra-4-pyridinyl-21H,23H-porphinato(2-)-KN21,KN22,KN23,KN24]-, (SP-4-1)-

RL: PRP (Properties); SPN (Synthetic preparation); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(electrophotog. photoconductor comprising zinc **porphyrin** compd. with certain crystal structure)  
 IT 16834-13-2P, 5,10,15,20-Tetra(4-pyridyl)-21H,23H-porphine  
 RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(in prepn. of zinc tetrapyridylporphyrin for **electrophotog.** photoconductor)

IT 79-09-4, Propionic acid, reactions 872-85-5, Pyridine-4-aldehyde  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(in prepn. of zinc tetrapyridylporphyrin for **electrophotog.** photoconductor)

L4 ANSWER 2 OF 2 CA COPYRIGHT 2004 ACS on STN

TI Metal porphyrin derivative organic magnetic material and **electrophotographic** magnetic toner and magnetic ink using it

IT Ferromagnetic materials  
 (electrophotog. magnetic toner and ink using (polymeric) metal porphyrin deriv. org. ferromagnetic material)

IT Magnetic materials  
 Magnetic materials  
 (inks, color; **electrophotog.** magnetic toner and ink using (polymeric) metal porphyrin deriv. org. ferromagnetic material)

IT **Electrophotographic** developers  
**Electrophotographic** developers  
 (magnetic toners, color; **electrophotog.** magnetic toner and ink using (polymeric) metal porphyrin deriv. org. ferromagnetic material)

# STN Columbus

IT Inks  
Inks  
(magnetic, color; **electrophotog.** magnetic toner and ink using  
(polymeric) metal porphyrin deriv. org. ferromagnetic material)

IT 14244-55-4P 14948-43-7P 16834-13-2P  
RL: IMF (Industrial manufacture); TEM (Technical or engineered material  
use); PREP (Preparation); USES (Uses)  
(**electrophotog.** magnetic toner and ink using (polymeric)  
metal porphyrin deriv. org. ferromagnetic material)

IT 109-97-7, Pyrrole 638-38-0, Manganese acetate 872-85-5, 4-  
**Pyridinecarboxaldehyde** 7646-79-9, Cobalt chloride, reactions  
12040-57-2, Iron chloride  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(**electrophotog.** magnetic toner and ink using (polymeric)  
metal **porphyrin** deriv. org. ferromagnetic material)

IT 193540-24-8  
RL: TEM (Technical or engineered material use); USES (Uses)  
(**electrophotog.** magnetic toner and ink using (polymeric)  
metal porphyrin deriv. org. ferromagnetic material)

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COST IN U.S. DOLLARS	SINCE FILE	TOTAL
	ENTRY	SESSION
FULL ESTIMATED COST	7.62	96.94

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE	TOTAL
	ENTRY	SESSION
CA SUBSCRIBER PRICE	-0.66	-11.22

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FILE CONTAINS CURRENT INFORMATION.  
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